Employees celebrate Apollo anniversary

ON July 20, Johnson Space Center employees celebrated the 35th anniversary of the Apollo 11 lunar landing by listening to stories shared by Apollo-era employees, admiring classic cars, eating Moon Pies and examining historic Apollo memorabilia.

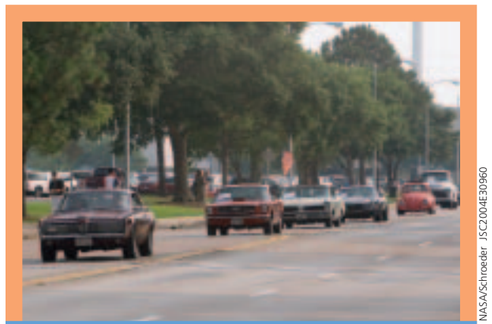
***Clockwise from top:** Legendary NASA engineer Max Faget was in attendance at the Apollo 11 anniversary events.*

Moon Pies were a hit at the Moon-themed celebration.

Employees peruse the Apollo memorabilia in the Teague Auditorium lobby.

Milt Heflin, Chief of the Flight Director Office, and former Deputy Center Director Randy Stone share Apollo-era stories with the crowd.

The Classic Car Parade makes its way down Second Street.



NASA/Schroeder JSC2004E30960

NASA/Stafford JSC2004E30945

NASA/Stafford JSC2004E30940

NASA/Stafford JSC2004E30953

NASA/Stafford JSC2004E30956

Space Center Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Johnson Space Center, Houston, Texas, and is published by the Public Affairs Office for all Space Center employees. The Roundup office is in Bldg. 2, Rm. 166A. The mail code is AP121. Visit our Web site at: **www.jsc.nasa.gov/roundup/weekly/**
For distribution questions or to suggest a story idea, please call 281/244-6397 or send an e-mail to roundup@ems.jsc.nasa.gov.

Joanne Hale Editor
Kendra Phipps Assistant Editor
Marshall Mellard Graphic Designer

PRSRT STD
U.S. POSTAGE
PAID
WEBSTER, TX
Permit No. G27

volume 43/8

Roundup

SPACE CENTER ROUNDUP
Lyndon B. Johnson Space Center

NASA JSC2004-E-28737

Undersea explorers

Four NASA crewmembers looked to the deep seas last month to help prepare for journeys into deep space. They used an undersea laboratory to study what it may be like to live and work in other extreme environments, such as the Moon and Mars. Astronaut John Herrington (left) led the crew in an undersea mission that field-tested equipment and technology for the International Space Station as part of the NASA Extreme Environment Mission Operations project. Astronauts Doug Wheelock (right) and Nick Patrick (second right) joined Herrington, a veteran space flier and spacewalker; and Biomedical Engineer Tara Ruttley in the Aquarius Underwater Laboratory off the coast of Key Largo, Fla., for the mission.

Read more about this on pages 8 and 9.

August 2004
Houston, Texas

Beak Sends...

A MESSAGE FROM CENTER DIRECTOR LT. GEN. JEFFERSON D. HOWELL JR.

Attitude

Like many of you I followed the progress of Lance Armstrong as he won his sixth straight Tour de France. In the final stages, after he had completely dominated the steep climbs in the mountains and left his closest competitors out of reach, all he had facing him was the last time trial and then the final ride into Paris. He had such a large lead, all he had to do was to make a decent showing in the final time trial and then claim his victory.

However, Lance Armstrong could not settle for an 'OK' performance. He wanted everyone, competitors and public alike, to know that he is the absolute champion. Instead of lying back, he once again dominated the race and won the trial by a significant margin. He proved beyond a doubt that he is the greatest bicycle racer in the world.

I'm not an expert on bicycle racing. I do believe, though, that a key ingredient to Lance Armstrong's victory was his winning ATTITUDE. Surrounded by the best talent in the racing world, he stood on the winner's podium at the end because of his guts, his incredible determination, and his indomitable spirit. He would not be denied. Just like Mr. Armstrong, I believe that whether or not you and I succeed both individually and as a team has a lot to do with our attitudes toward our personal lives and our work here at JSC.

Charles Swindle wrote, "...we have a choice everyday regarding the attitude we will embrace for that day. We cannot change our past. We cannot change the fact that people will act in a certain way. We cannot change the inevitable. The only thing we can do is play on the one string we have and that is our attitude. I am convinced that life is 10% what happens to me and 90% how I react to it. And so it is with you."

Steve Allen wrote, "One of the nice things about problems is that a good many of them don't exist except in our imaginations." According to Aldous Huxley "Experience is not what happens to a man: it is what a man does with what happens to him."

We've had a 'hard row to hoe' for the past 18 months and there's no indication that it's going to get any easier for the next 18. However, we've turned the corner on the road to return to flight and we're well on our way to a spring '05 launch. If we keep our eye on the prize, hang together, and keep giving our best effort, we will get it done.

Attitude. I'm convinced that with the incredible talent and winning spirit of the JSC team, we will overcome all hurdles, no matter how difficult. We will not be denied!

IT'S GREAT TO BE ALIVE AND IN HOUSTON!

Special delivery from Earth to space

by Melissa Davis

Astronaut Mike Fincke will have a special delivery waiting for him when he returns to Earth in October: a four-month-old daughter he'll be holding for the first time.

When Mike launched on April 18 from Baikonur Cosmodrome in Kazakhstan, he left behind his pregnant wife Renita and 2-year-old son Chandra for his six-month stay aboard the International Space Station. During his stay, his family has grown by one more.

On June 18, Renita gave birth to Tarali Paulina Fincke. While orbiting 240 miles above the Earth, Mike still was able to be present at the birth – if only by cell phone. He is the first astronaut to celebrate the birth of his child from space.

After Tarali was born, Mike radioed to Mission Control to thank NASA for ensuring he stayed connected to his family during this special time in their lives. He also explained the meaning of their daughter's name.

"Her name is Tarali Paulina, and Tara is the Indian dialect meaning star," he said. "Our first boy, his name is Chandra, which means Moon. So, my wife had already given me the Moon, and now she's given me a star, and it's a privilege to (have it) happen aboard the International Space Station."

Shortly before Tarali was born, Renita shared her thoughts about the historical birth – as well as other details of her life as a career woman and an astronaut's wife.

How do you feel knowing that this is the first child born to an astronaut living aboard the Space Station?

Well, I think it's wonderful. It's such an amazing adventure that we want to share it with everybody.

What do you do at Johnson Space Center?

I'm an engineer. I work for Wyle Laboratories, and I've been here since 1990. I started as a quality engineer. I moved on to work as an integration engineer for the Medical Sciences Division at JSC. I worked on the Crew Health Care System for many years, and then after that I've been working on the biotechnology facility, which is part of the Bioastronautics contract.

Continued on page 4

NASA/Blair JSC2004E30640

The Earth-bound members of the Fincke family are pictured at Johnson Space Center. Renita Fincke sits next to son Chandra and holds daughter Tarali Paulina, who was born June 18 while her father, Mike Fincke, orbited in the International Space Station.

How long have you known that you wanted to be an engineer?

When I was in high school, I was really interested in math and science and that's what I was doing really well at. My father's an engineer and so that kind of got me in the right field. I think that's about when I decided to become an engineer.

Tell me a little bit about your family's background.

My parents were both born in India. We're from a small state called Assam, on the very east coast. And it's very, very rich in culture. It's a beautiful, beautiful state. They grow tea there, they've got beautiful mountains, and it really is a wonderful place. Mike got a chance to visit there last year. He got to meet a lot of my family and that was a lot of fun because they just loved him … of course! I really enjoy having part of another culture that's part of me, because that, I think, makes me a more well-rounded person.

Tell me about your son, Chandra; how old is he?

He's almost 3.

What has he added to your lives?

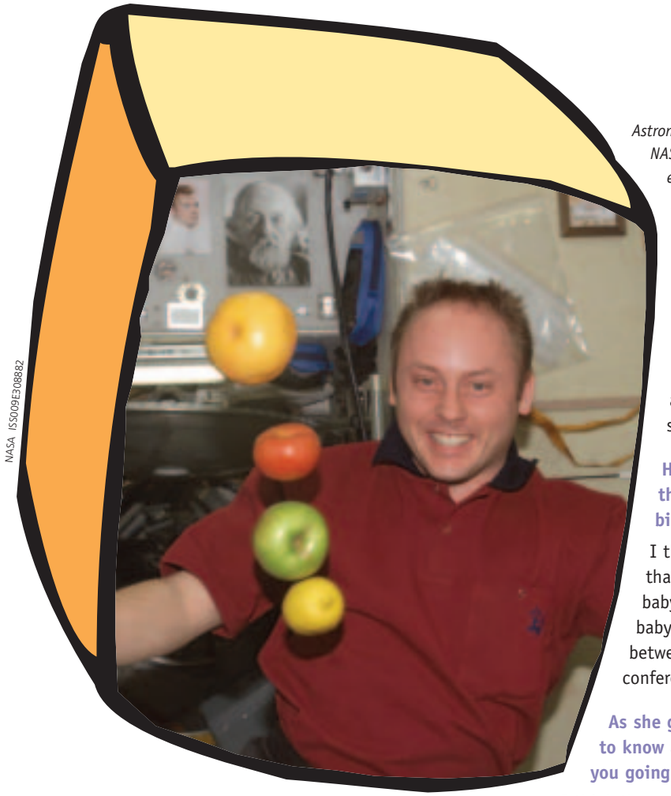
We probably couldn't even tell you in words. It has just been absolutely amazing. I think from the day he was born, he's a wonderful child. Mike and I both just adore him. He's just been great, and added so much to our lives. I can't imagine what it would be like without him. He's very active, very intelligent, a lot of fun – a lot of work, too, but I think that all goes along with the territory. So we're really, really excited about having a second one.

You've told me that he interacts really well with adults, with the fellow astronauts.

Yes, he does. One of the first things that he said to his daddy when Mike called – I guess it was the day after Mike's launch – he called and said, "How are you doing, Chandra?" Chandra said, "Great." And Mike said, "Well, what are you doing?" He said, "Well, I'm playing with my friends." His "friends" happened to be an astronaut and a flight surgeon.

I know when you planned your pregnancy you all were thinking Mike was going much later to the Space Station. So how did you feel when you learned he was going to be gone when the baby's born?

There's only so much planning you can do for a pregnancy. It's going to happen when it's going to happen. One of the other astronaut spouses once told me, "Don't ever plan anything around launches." And you know what? That's so true. We can never plan around launches. I'm glad that it happened when it did. We're so blessed to be having a second child. It didn't scare me that he was going to be gone. We just had to prepare the right way to make sure everything was set up before he left. I think that everything will be just fine.



NASA ISS09E38882

Astronaut Mike Fincke, Expedition 9 NASA ISS science officer and flight engineer, is pictured near fresh fruit floating freely in the Zvezda Service Module of the International Space Station.

How do you communicate with your husband in space?

Mainly by the satellite telephone. We've been able to talk pretty much every day. We've also been doing video conferences set up by JSC teams. A lot of people are involved in making sure that I get video of Mike straight to my house, and we do that once a week. That helps Chandra out a lot because he's very excited to see his daddy, flipping around, floating and things like that. I think that's been really helpful in keeping in touch with each other. And then we do have e-mail, so if there's anything important I need to send up I just put it in an attachment. We do that with pictures and video too.

What plans are there to keep Mike involved in the birth of the baby?

We are working with the hospital to make sure that we have some communication pretty soon after I deliver the baby. We'll be able to send him video of the birth – as much of it that we want to send – and have that sent up to him as soon as it's available. I think within a few hours we'll probably be able to send something to him, and then I'll also be able to talk to him on the phone. We're planning on doing a video conference with the newborn, and so we'll make sure that he is in the loop.

How do you plan to keep Mike involved in the baby's life in the months after the birth, before he returns?

I think we'll be doing a lot of video because that's easy for him to be able to see how the baby's growing. In the first four months the baby changes a lot. We'll be able to make sure, between pictures, video and the video conferences, that we keep him in the loop.

As she gets older, what are you going to want her to know about this time in her life, and what are you going to always tell her about?

I think the main thing is that her daddy was doing an important job during her birth, but that he really loves her and that he is always going to have her as part of him, and that she's loved by everybody.

What are you looking most forward to when Mike gets back?

Spending family time together, definitely. It'll be nice to have some quiet time where we get to just enjoy life.

Mike has repeatedly said he owes you big time for this – for going it alone. What does he owe you? What are you going to collect on?

You mean, besides a car and a house? No, I'm just kidding! He's not going to owe me anything big – probably just being able to spend time together. This is a wonderful, exciting adventure for both of us, and I've supported him all the way – I support him every day. I hope that everything is successful for his mission, that he comes home safely, and that we get to enjoy many more adventures together for the rest of our lives.

NEW ATTRACTION AT THE NBL

Science, art and the embodiment of human perfection

by Tiffany Travis

For ages, the combination of science, technology and art has intrigued the greatest of minds. Albert Einstein said "The most beautiful experience we can have is the mysterious - the fundamental emotion which stands at the cradle of true art and true science." Recently, The Sonny Carter Training Facility Neutral Buoyancy Lab (NBL) received such a combination in the form of a mural.

Derived from Renaissance origins, the artistic addition was the idea and creation of NBL Oceaneering Utility Diver Shanna Crew. She said she felt that a mural could give the white walls of the world-class training facility a touch of color and inspiration for all who visited and worked in the facility.

"Shanna thought the NBL needed a creative face-lift," Michael G. Hess, NBL Chief, said. "She brought in the preliminary drawings and we all thought it was a really cool idea. There are two maintenance weeks scheduled each year. This most recent maintenance period worked out to be the perfect time for us to do something like this and not get in the way of normal dive operations. The mural really makes this highly visible area sparkle."

The south wall of Test Conductor Room A was selected as the mural's location due to its visibility. Protocol tours, Space Center Houston guests and all who pass the pool deck will be able to gaze upon the 6' X 12' work of art.

In a mere four days Crew was able to complete the spectacle that captures the past, present and future evolution of an extravehicular activity (EVA). Her original inspiration came from the EVA patch that depicts a suited astronaut as Leonardo da Vinci's "Vitruvian Man." Crew combined the concept of the EVA patch with the suited astronaut and Da Vinci's original image. Continuing a morphed theme, Crew illustrated the cooperation of astronauts and divers by having a utility diver hand the "Astronaut/Vitruvian Man" a pistol grip tool. The evolution is completed as an astronaut conducts an EVA while working on the largest architectural project ever assembled in space, the International Space Station.

NASA JSC2004E28734

Crew's original inspiration came from the extravehicular activity patch that depicts a suited astronaut as Leonardo da Vinci's "Vitruvian Man."

"I wanted to create something that said what the people at the NBL do on a daily basis," Crew said. "It's not just about the divers or just about the astronauts. It's about teamwork and all of us working out here together for a common goal."

"This mural will hopefully be the first of a series of murals planned for the future," Ronald Lee, NBL Deputy Chief, said. "It really means a lot to have Shanna, one of our own divers, as the creator of the mural. Gene Kranz said it best when he said, 'The most important thing we have is our people.' That is so true. We have so many talented people out here."

Crew's passion for art became apparent on her mother's walls as a young child. Doodling, drawing and painting became hobbies and eventually led to some small residential projects. This is her first highly visible public work.

Crew has been diving for the NBL for more than three years. She became a professional diver after taking diving as a physical education credit in college and shortly afterwards obtained her dive master's certification. While working in a local dive shop in Nacogdoches, Texas, she heard about an opportunity to dive with astronauts at the NBL and thought it would be a great experience. She has logged over 1000 dive hours to date in the NBL pool.

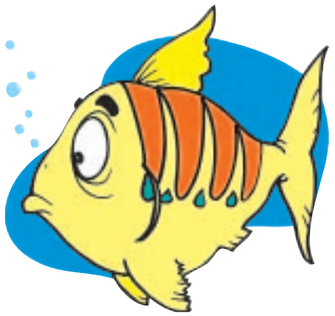
"Shanna is a really good diver. You have to be (a good diver) to be in the Utility group," Rudy Lopez, Dive Supervisor, said." I never knew she was an artist until I found out she was the person drawing funny little pictures of me all over the place. I didn't have a clue that she could do something like this, though. It really amazes me that she can do the mural freehanded."

Crew has yet to title the artwork. She hopes that the piece can speak for itself and provide spectators with a glimpse of what the NBL attempts to accomplish each day. Crew also hopes that she was able to capture the very essence of what NASA strives for – to go beyond and to unravel the mysteries that lay before us.

NASA/Blair JSC2004E25402

The Sonny Carter Training Facility Neutral Buoyancy Lab south wall was turned into a work of art by one of its own divers, Shanna Crew.

FINDINGS *from* NEEMO



by Kendra Phipps

NASA JSC2004E30613

NASA JSC2004E33586

NASA JSC2004E30604

This time, NEEMO was the one doing the "finding" – to be specific, the crewmembers of the sixth expedition of the NASA Extreme Environment Mission Operations (NEEMO) project found some valuable insights into spaceflight when they lived below the Florida Keys in July.

"Nick (Patrick) once asked me toward the end of the mission if I could sum up my thoughts about our experience with NEEMO in one word, and I replied 'Learning,'" Tara Ruttley, biomedical engineer and NEEMO 6 crewmember, said. Astronaut Patrick was one of her fellow aquanauts, along with Astronauts John Herrington and Doug Wheelock.

"This NEEMO mission has given me the most unique perspective of how flight hardware should be handled in a way that no other engineering training, academic course work or flight hardware laboratory could provide," Ruttley said.

NEEMO allows a crew of "aquanauts" to live and work in the Aquarius Underwater Laboratory off the coast of Key Largo, Fla. for several days to gain insight into life in space. The extreme environment of Aquarius – a 45-foot long, 13-foot diameter complex about 62 feet beneath the surface – makes it a well-suited analog for another extreme environment: the International Space Station.

NEEMO 6 was dedicated to biomedical engineering research that will benefit future spaceflights. Some of the mission's scientific experiments included:

- evaluation of the Constant Force Resistive Exercise Unit, a novel resistive exercise machine
- determining the efficacy of silver ion technology as an antimicrobial countermeasure in an enclosed environment
- evaluation of a wireless medical monitoring device as well as wireless tracking hardware
- assessment of the Portable Bone Quality Assessment Device, a handheld noninvasive device designed to evaluate bone quality

Crewmembers also exited the Aquarius on diving excursions simulating spacewalks and built underwater structures – an activity analogous to Space Station assembly activities.

Another highlight of the mission was the chance to speak directly with Expedition 9 Space Station Science Officer Mike Fincke. The "ship-to-ship" downlink took place on July 15.

"NEEMO really is an excellent test bed for Station," Fincke said. He was an aquanaut himself on the NEEMO 2 mission.

"Working as a team is the way to solve all the problems of exploration no matter what the venue – underwater, in space, communicating with Mission Control," Fincke said. "It's a pleasure and it's also the only way to get things done. People need to realize that things never work out right the first time – well, maybe in 'Star Trek' – so we need to do what human beings do best, and that's problem solving."

To listen to the downlink, go to **http://spaceflight.nasa.gov/ gallery/audio/station/crew-9/ndxpage1.html**

Below are some excerpts from the NEEMO 6 crewmembers' journals. For the full entries, visit **http://spaceflight.nasa.gov/shuttle/support/training/neemo/journals/neemo6/.**

John Herrington

One of the things that my parents like to do at their home in Spicewood, Texas is to sit on the front porch and watch the sun go down. All sorts of animals make their way across the stage of Texas hill country. … Where my parents would expect the occasional animal to make its presence known, I faced a multitude of sea life, swimming in the light and shadows. Fish in all shapes and sizes, casting flashes of light like a mirrored ball on a dance floor. And it was a dance! Fish were darting about in an endless cascade of movement. It was as pleasing as any moment I have spent on my parent's porch. Just a view from a different world, but one where life is just as full and remarkable as the one above. …

I leave this experience with a much deeper appreciation for the life that exists in the sea. It is a wondrous environment full of beauty, brimming with life, from the smallest plankton to the magnificently agile manta rays. I also leave with a profound and abiding respect for the men and women that live and work under the surface of the sea. Their work is just as dangerous as flying in space and they relish the challenge just like those of us in the astronaut corp.

Tara Ruttley

I will never look at (flight hardware) systems the same way again. Words on JSC Engineering documents, minutes at meetings, crew debriefs, hardware part numbers, schematics, drawings and procedures will now have a different meaning to me.

Even the hardware that performed so beautifully in the lab had its own personality in the Aquarius habitat: some due to the unique environment (humidity, pressure, etc.), some due to computer hiccups, and some due to random other things that we could have never even anticipated. It's the beauty of using this environment and this particular mix of crew to adequately evaluate such hardware in its early prototype stages as a potential for spaceflight. It's the closest end-to-end testing you'll ever get before spaceflight development.

Doug Wheelock

Our days were full of science and engineering tasks each day, both outside and inside the habitat.

We have very clear objectives each day, yet the sea meets us each morning with surprises that remind us that we are just visitors here.

It was great to be on the operational end of a real mission and to understand the importance of good, clear communication before, during and after tasks both inside and outside Aquarius. …

Early in the mission, as John Herrington and I were working on the pinnacle excursion line to the south of the habitat, we saw the most incredible sight, and my mind keeps replaying the spectacle. I suppose it is one of those things that I will remember for life. We saw two huge Manta Rays swimming loops next to each other on a feeding run. Boy, talk about feeling like a visitor! I'll never be the same after seeing that.

The days of doctors making house calls may seem like ancient history for most North American patients, but in October, three astronauts and a Canadian doctor will test the latest concepts in long-distance house calls during NEEMO 7.

NASA JSC2004E33460

Above: The NEEMO topside core team takes a break between NEEMO 6 dives. From left: Monika Schultz, Astronaut Office Representative; Bill Todd, NEEMO Project Lead; Marc Reagan, NEEMO 6 Mission Director; Michelle Lucas, NEEMO Operations Planner.

Facing page, from left to right: NASA and National Undersea Research Center staff greet the crew through Aquarius' Main Lock V-Port.

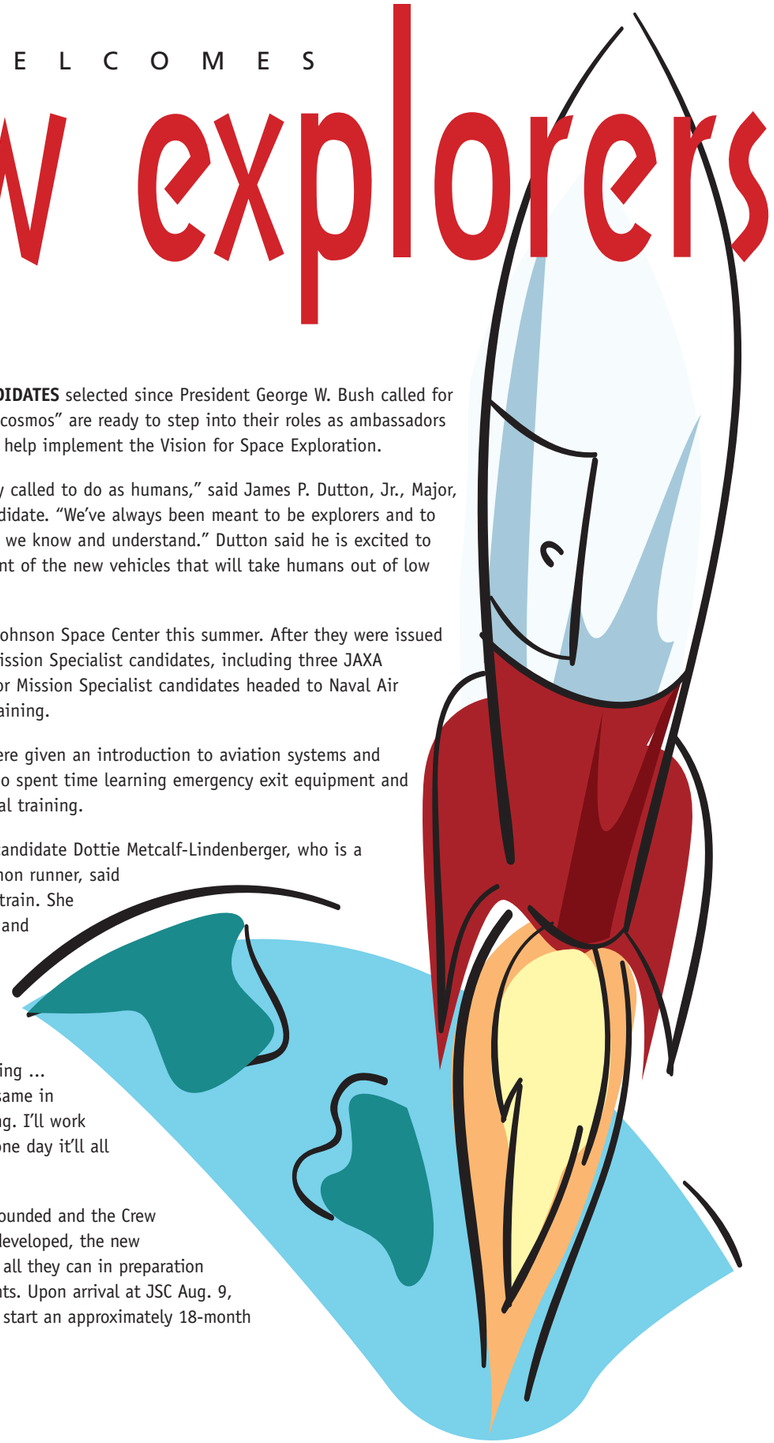
The NEEMO 6 crew is pictured in the Aquarius 'wet porch' before an extravehicular activity. From left: Astronaut John Herrington, Biomedical Engineer Tara Ruttley, Astronaut Doug Wheelock, Astronaut Nick Patrick.

Aquanaut John Herrington deploys an excursion line for a coral science task.

J S C W E L C O M E S

new explorers

by Julie Burt



THE FIRST ASTRONAUT CANDIDATES selected since President George W. Bush called for America to go out "into the cosmos" are ready to step into their roles as ambassadors of the space program and to help implement the Vision for Space Exploration.

"I think it's what we're really called to do as humans," said James P. Dutton, Jr., Major, U.S. Air Force, and Pilot candidate. "We've always been meant to be explorers and to push the boundaries of what we know and understand." Dutton said he is excited to contribute to the development of the new vehicles that will take humans out of low Earth orbit.

The candidates reported to Johnson Space Center this summer. After they were issued their flight suits, the nine Mission Specialist candidates, including three JAXA astronauts and three Educator Mission Specialist candidates headed to Naval Air Station Pensacola to start training.

In Florida, the candidates were given an introduction to aviation systems and aviation physiology. They also spent time learning emergency exit equipment and procedures, as well as survival training.

Educator Mission Specialist candidate Dottie Metcalf-Lindenberger, who is a science teacher and a marathon runner, said she knows what it is like to train. She said she knows what pain is and how to suffer through it.

"But I also know what the goal is," she said. "And the big thing in training and endurance is to just keep going ... So, I think that will be the same in (astronaut candidate) training. I'll work really, really hard and then one day it'll all pay off."

While the Space Shuttle is grounded and the Crew Exploration Vehicle is being developed, the new candidates are ready to learn all they can in preparation for their upcoming assignments. Upon arrival at JSC Aug. 9, the astronaut candidates will start an approximately 18-month training period.

NASA/Bouchard JSC2004E21979

Former astronaut and U.S. Senator John H. Glenn Jr. is surrounded by NASA's newest astronaut class, backdropped by the Space Shuttle Enterprise *at the National Air and Space Museum. From the left are Joe Acaba, Jose Hernandez, Jim Dutton Jr., Bobby Satcher Jr., Tom Marshburn, Dottie Metcalf-Lindenburger, Ricky Arnold II, Shane Kimbrough, Chris Cassidy and Shannon Walker. Not pictured is Randy Bresnik, the eleventh member of the 2004 astronaut class.*

First, there will be an overview of JSC functions and facilities. Land survival training is next, followed by flight training. Along with learning about the T-38 trainer aircraft, the candidates will have a familiarization flight on the KC-135. The pilots will then have time in the Shuttle Training Aircraft.

From there they will train frequently in T-38s. Mission Specialist and Educator Mission Specialist candidates will spend 12 hours per quarter in T-38s, while Pilot candidates will spend 15 hours per month training in T-38s.

For the next few months, the candidates will be taken back and forth to NASA Headquarters and to each NASA Center. During these visits, they will have historical and anecdotal sessions with former astronauts, managers and subject matter experts. These visits are important in understanding what each Center does, since the astronaut candidates are now ambassadors for the space program.

Shuttle Systems and International Space Station Systems training will take up a good portion of their time for the next year or so. The candidates will also have a 32-hour Russian language introduction. Finally, geophysical field training, exploration field training, SCUBA certification and the National Outdoor Leadership School will all be completed by Spring 2006.